

CLAIMS

1. An isolated polynucleotide encoding a polypeptide that comprises the amino acid sequence shown in SEQ ID NO:2.

2. The isolated polynucleotide of claim 1 which comprises the nucleotide sequence shown in SEQ ID NO:1.

3. The isolated polynucleotide of claim 1 which consists of the nucleotide sequence shown in SEQ ID NO:1.

4. The isolated polynucleotide of claim 1 which is a cDNA molecule.

5. An expression vector comprising a polynucleotide that encodes a polypeptide comprising the amino acid sequence shown in SEQ ID NO:2.

6. The expression vector of claim 5 which comprises the nucleotide sequence shown in SEQ ID NO:1.

7. A host cell comprising an expression vector comprising a polynucleotide that encodes a polypeptide comprising the amino acid sequence shown in SEQ ID NO:2.

8. The host cell of claim 7 wherein the expression vector comprises the nucleotide sequence shown in SEQ ID NO:1.

9. A purified polypeptide comprising the amino acid sequence shown in SEQ ID NO:2.

10. The purified polypeptide of claim 9 which consists of the amino acid sequence of SEQ ID NO:2.

11. A fusion protein comprising a polypeptide consisting of the amino acid sequence shown in SEQ ID NO:2.

12. A method of producing a polypeptide comprising the amino acid sequence shown in SEQ ID NO:2, comprising the steps of:

culturing a host cell comprising an expression vector that comprising the nucleotide sequence shown in SEQ ID NO:1 under conditions whereby the polypeptide is expressed; and

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isolating the polypeptide.

13. A method of detecting a coding sequence for a polypeptide comprising the amino acid sequence shown in SEQ ID NO:2, comprising the steps of:

5 hybridizing to nucleic acid material of a biological sample a polynucleotide comprising 11 contiguous nucleotides of the complement of the nucleotide sequence shown in SEQ ID NO:1, thereby forming a hybridization complex; and

detecting the hybridization complex.

10 14. The method of claim 13 further comprising the step of amplifying the nucleic acid material before the step of hybridizing.

15 15. A kit for detecting a coding sequence for a polypeptide comprising the amino acid sequence shown in SEQ ID NO:2, comprising:

a polynucleotide comprising 11 contiguous nucleotides of the complement of the nucleotide sequence shown in SEQ ID NO:1; and

instructions for the method of claim 13.

16. A method of detecting a polypeptide comprising the amino acid sequence shown in SEQ ID NO:2, comprising the steps of:

20 contacting a biological sample with an antibody that specifically binds to the polypeptide to form a reagent-polypeptide complex; and detecting the reagent-polypeptide complex.

17. A kit for detecting a polypeptide comprising the amino acid sequence shown in SEQ ID NO:2, comprising:

an antibody that specifically binds to the polypeptide; and instructions for the method of claim 16.

25 18. A method of screening for agents that can regulate the activity of an neuropeptide Y-like G protein-coupled receptor (NPY-like GPCR), comprising the steps of:

contacting a test compound with a polypeptide comprising the amino

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acid sequence shown in SEQ ID NO:2; and

detecting binding of the test compound to the polypeptide, wherein a test compound that binds to the polypeptide is identified as a potential agent for regulating activity of the NPY-like GPCR.

- 5 19. The method of claim 20 wherein the step of contacting is in a cell.
 20. The method of claim 20 wherein the step of contacting is *in vitro*.
 21. The method of claim 20 wherein the step of contacting is in a cell-free system.

22. The method of claim 20 wherein the first polypeptide comprises a
10 detectable label.

23. The method of claim 20 wherein the test compound comprises a detectable label.

24. The method of claim 20 wherein the test compound displaces a ligand that is bound to the NPY-like GPCR.

- 15 25. The method of claim 20 wherein the first polypeptide is bound to a solid support.

26. The method of claim 20 wherein the test compound is bound to a solid support.

- 20 27. A method of screening for agents that can regulate the activity of an NPY-like GPCR, comprising the steps of:

 contacting a test compound with a product encoded by a polynucleotide comprising the nucleotide sequence shown in SEQ ID NO:1; and

- detecting binding of the test compound to the product, wherein a test compound that binds to the product is identified as a potential agent for regulating the
25 activity of the NPY-like GPCR.

28. The method of claim 27 wherein the product is a polypeptide.

29. The method of claim 27 wherein the product is RNA.

30. A method of reducing expression of an NPY-like GPCR, comprising the

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step of:

contacting a cell with an antibody that specifically binds to a polypeptide comprising the amino acid sequence shown in SEQ ID NO:2, whereby expression of the NPY-like GPCR is reduced.

- 5 31. The method of claim 30 wherein the cell is *in vivo*.
 32. The method of claim 30 wherein the cell is *in vitro*.
 33. A method of reducing expression of an NPY-like GPCR, comprising the step of:

 contacting a cell with an antisense oligonucleotide that specifically binds
10 to a the nucleotide sequence shown in SEQ ID NO:1, whereby expression of the NPY-like GPCR is reduced.

34. The method of claim 33 wherein the cell is *in vivo*.
 35. The method of claim 33 wherein the cell is *in vitro*.
 36. A pharmaceutical composition, comprising:
15 an antibody that specifically binds to a polypeptide comprising the amino acid sequence shown in SEQ ID NO:2; and
 a pharmaceutically acceptable carrier.
 37. A pharmaceutical composition, comprising:
 an antisense oligonucleotide that specifically binds to the nucleotide
20 sequence shown in SEQ ID NO:1; and
 a pharmaceutically acceptable carrier.
 38. A pharmaceutical composition, comprising:
 an expression vector encoding a polypeptide comprising the amino acid sequence shown in SEQ ID NO:2; and
25 a pharmaceutically acceptable carrier.
 39. The pharmaceutical composition of claim 38 wherein the expression vector comprising the nucleotide sequence shown in SEQ ID NO:1.
 40. A method of treating obesity comprising the steps of:

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